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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/624,737	07/22/2003	Igor Anilovich	GP-302820	7164

7590 12/29/2004
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EXAMINER

GARBER, CHARLES D

ART UNIT	PAPER NUMBER
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2856

DATE MAILED: 12/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary

Application No.

10/624,737

Applicant(s)

ANILOVICH ET AL.

Examiner

Charles D. Garber

Art Unit

2856

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 15-17 is/are allowed.
- 6) ☒ Claim(s) 1,2,8 and 9 is/are rejected.
- 7) ☒ Claim(s) 3-7 and 10-14 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>07/22/2003</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 8 and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Nakaniwa (US Patent 5,227,975).

Regarding claims 1 and 8, Nakaniwa discloses an inlet oxygen sensor 14 shown in figure 6 and a controller 11 that monitors a signal generated by said oxygen sensor.

Nakaniwa recites “the control unit 11 performs a ... malfunction detection for the oxygen sensor 14, and a correction control for compensating the feedback control on the basis of the detected malfunction”. The reference also recites “signal level varying speed measuring means for receiving the detection signal to determine a signal level increasing speed of the detection signal which is an increase amount per unit time of the detection signal, and a signal level decreasing speed of the detection signal which is decrease amount per unit time of the detection signal, to produce a signal level increasing speed indicative signal and a signal level decreasing speed indicative signal”. In other words Nakaniwa determines a parameter based on the sensor signal rate of change when the engine control is changing between rich and lean conditions for use in diagnosing the sensor which is subject to deterioration as shown in figures 2, 4 and 5.

Nakaniwa then discloses determining speed of oxygen signal variation for both positive and negative changes in signal (associated with rich/lean transition) adding positive and negative signal values and comparing the value to a control value corresponding to a new sensor that has not yet deteriorated (column 24 lines 19-51). In the case where negative change is abnormal the more negative (smaller) value will determine that the sensor has trouble. This is equivalent to determining a rate of change of said signal, computes at least one diagnostic parameter based on said rate of change, and indicating a malfunction of the oxygen sensor if the diagnostic parameter is smaller in magnitude than a corresponding threshold.

As for claims 2 and 9, Nakaniwa may indicate proper function of the oxygen sensor if the value is slightly larger in magnitude than a control value but not substantially larger.

Allowable Subject Matter

Claims 3-7 and 10-14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding claims 3 and 10, the prior art of Nakaniwa discussed above further discloses the controller classifies the rate of change into one of a positive class, a negative class () but Nakaniwa and the prior art do not disclose or suggest an excluded class as in the instant invention.

Claim 15 is allowed for substantially the same reason as claims 3 and 10.

Claims 11-14 depending from allowable claim 8 and claims 4-7 depending from allowable claim 3 are allowable for the same reason.

Claims 16 and 17 depending from allowed claim 15 are allowed for the same reason.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The additional references cited on the accompanying form PTO-892 though not cited above are provided to indicate other prior art Oxygen Sensor diagnostic devices and methods which include one or more features or limitations in common with the instant invention.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles D. Garber whose telephone number is (571) 272-2194. The examiner can normally be reached on 6:30 a.m. to 3:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on (571) 272-2208. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2856

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

cdg

A handwritten signature in black ink, appearing to read "Charles Garber", with a stylized flourish at the end.

**CHARLES GARBER
PRIMARY EXAMINER**